cians, is to increase the activity of the circulation, and to depress the functions of the nervous system. The indications for this mode of treatment are thus drawn up by Lersch; it is especially serviceable in cases of dyspnœa dependent on the accumulation of mucous secretion in the pulmonary vesicles, or on emphysema of the lung. Helfft considers that this gas exercises a stimulant action upon the respiratory tract, and he recommends its use in chronic inflammation of the larynx and of the pharynx, in bronchial catarrh, and humid asthma. M. Goin recommends its use in nervous affections of the respiratory passages, as in asthma, and also in intermittent fever. The contra-indications of this inhalation are said to exist whenever any affection of the respiratory passages is accompanied by excitement of the circulating system. The German physicians unanimously forbid this treatment in phthisical cases. According to Gräfe, it is absolutely injurious when cavities are formed, these being often surrounded by a zone of inflammation. Under the influence of the carbonic acid inhalations the expectoration is diminished, and the fetor of the secretions is corrected, but the inflammation of the pulmonary parenchyma is augmented. Its use must also be avoided in hæmoptysis.

Dr. Willemin draws the following conclusions upon the inhalation of carbonic acid—namely, that when mixed with air, this gas produces a more or less active excitement of the respiratory passages, the action being analogous to that of the same gas upon the skin, the eye, &c., and this effect ought to contra-indicate its use whenever there exists a disposition to acute inflammation.

That the excitement is followed by a sedative effect, which appears to depend on a special action of this gas on the nervous system, the respiration becomes easier, the cough is allayed, the circulation is retarded, and the redness of chronic inflammation diminishes.

That continued for a longer time, or made with a larger proportion of gas, these inhalations cause vertigo, relaxation of the limbs, and anæsthesia.

That, in addition to this general action, the gas possesses an anæsthetic power over wounds and parts denuded of epidermis.

That these inhalations are especially efficacious in chronic inflammations with atony of the mucous membrane and exaggerated secretion, and in nervous affections of the respiratory passages; but that they ought to be avoided in phthisical cases.—*Brit. and For. Med.-Chirurg. Rev.*, Jan. 1859, from *L'Union Médicale*, July 15, 1858.

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14. *Instillations of a Tepid and rather Concentrated Solution of Chlorate of Soda into the Trachea of Children affected with Croup.*—M. BARTHEZ has been trying local applications to the false membranes produced in croup. For about two months, an epidemic of croup had prevailed near the Hôpital Ste. Eugénie, and had assumed some peculiar characters, being attended with the production of a false membrane in the bronchi, trachea, and larynx, seldom in the pharynx, and hardly ever in the nasal fossæ. The general symptoms of blood-poisoning were generally absent, and after tracheotomy, the children died with the symptoms of slow asphyxia; they all died, and in the greater part of them, the trachea and the bronchi were filled with false membranes.

M. Barthez had previously made some experiments on the comparative effects of chlorate of soda and chlorate of potash, when these salts are applied to the false membranes. Two portions of false membrane, of nearly equal dimensions, were placed in contact respectively with a concentrated solution of chlorate of potash, and a concentrated solution of chlorate of soda. The false membranes were gradually altered in character; they softened and lost their opacity; their tissue became less compact, more transparent, and afterwards diffluent, and their membranous form disappeared without losing all its cohesiveness. The only difference observable in the two solutions was that the changes began later in the chlorate of potash than in the chlorate of soda, and required a much longer time for their completion. The same membrane immersed in water only, preserved its natural appearance for many days.

Guided by these experiments, M. Barthez instilled through the canula a tepid solution of chlorate of soda in some cases of tracheotomy, in the hope that he might thus effect the softening of the false membranes, and consequently the more easy destruction of their adhesions, and their more rapid and complete expulsion. The results of these experiments were very encouraging, for all the patients previously treated had died, but when the new system had been introduced, three out of seven patients recovered. Judging from this result, M. Barthez is convinced that the instillation is innocuous, and that it is even useful. In order to ascertain the different effects produced by solution of chlorate of soda and by pure water, a patient was treated by instillations of water only, but although the instillation was very frequently repeated and cough was excited, yet no other liquid but water was thrown out. At last, solution of chlorate of potash was substituted for the water, and it was instilled every quarter of an hour; and at the end of about an hour a remnant of false membrane was evacuated, and then other portions in succession until the next day. The suffocation diminished in proportion, and the patient recovered completely.

M. Barthez relates five cases in which the chlorate of soda was employed in instillations in the trachea; and although he admits that the cases are not sufficient to establish incontestably the efficacy of this treatment, yet he thinks that the beneficial action of the soda-salt is very probable. Tracheotomy ought not to be performed unless there is reason to suppose that a false membrane exists in the trachea; even when the false membrane exists, it is useless to employ instillations when there are symptoms of diphtheric poisoning, or when the expectoration of false membranes is abundant; but when tracheotomy has been performed, and it is determined to use instillations, then the chlorate of soda appears to assist the child in discharging the false membranes which oppose the entrance of air into the lungs.—*Brit. and For. Med. Chirurg. Rev.*, Jan. 1859, from *Bull. Gén. de Thérap.*, May 30, 1858.

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15. *Chlorine in the Treatment of Diphtheria.*—The *British Medical Journal* of March 8, 1859, contains two communications on this subject, one by Mr. C. F. Hodson, and the other by Mr. S. A. Alford.

Mr. Hodson recommends the inhalation of the vapour of boiling water mixed with a portion of solution of chlorinated lime, and he relates the case of a child successfully treated by this method.

Mr. Alford recommends a gargle of chlorinated soda, of the strength of from half a drachm to a drachm in an ounce of water, to be used every ten or fifteen minutes, so as to wash away, and *keep washed* away, the morbid formation, "and, by the constant application of the chlorine contained in the gargle, destroy the poisonous character of the disease." When the plan is persevered in, he says, "the white fungi and jelly-like mass was washed away; and the throat is kept free by constant gargling."

He believes "the chlorine itself not only counteracts the poisonous nature of the morbid secretion, and destroys its deleterious character, but also has a beneficial effect on the system at large; and again, by destroying the virus, prevents its spreading to other members of the family. The disease has never spread where this plan has been adopted. All these points have satisfied me in the use of this remedy, and I am pleased to find others have found it equally successful, as noticed in the Journal by Dr. Bryden. The character of the gargle is important, but I feel the frequently washing of the throat to be equally essential; and for this reason, I prefer the gargle being used every ten or fifteen minutes to the dilute hydrochloric acid only applied occasionally, as used in some of the metropolitan hospitals. In addition to the frequent washings of the throat, which I consider *the* treatment, I apply *spongio-piline*, frequently steeped in hot water, tied round the neck; and at once keep up the strength by stimulants; viz., wine and brandy, with eggs, arrowroot, or water. I give bark and chlorate of potass with henbane, and an anodyne at night (twenty minims of liquor opii sedativus); for sleeplessness has been a marked feature in all my cases; aperients of a warm but decided nature, and little or no mercury, make up the treatment I adopt. When the above plans have been carried out, I have found them invariable successful.

"In several severe cases of ulcerated sore throat, the same gargle, constantly applied, has succeeded."